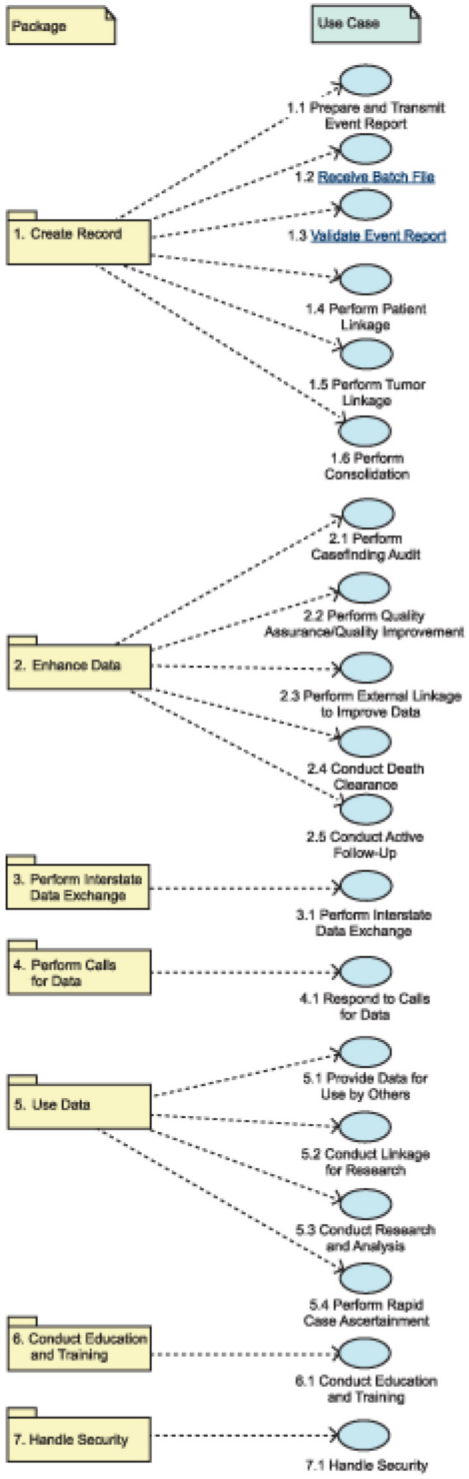
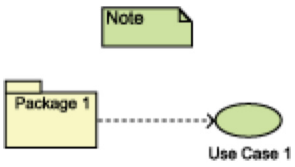
NPCR–MERP Central Cancer Registry Operations Use Case Diagram

The NPCR–MERP Central Cancer Registry Operations Use Case Diagram shows the hierarchical grouping of central cancer registry operations, starting with the general top-level functions and followed by the more detailed second-level functions.



Legend



Create Record

A first-level function in which event reports are selected, transmitted, validated, and consolidated in a cancer record. It includes the following six steps:

1. **Prepare and Transmit Event Report:** The process whereby a data source submits event reports to the hospital cancer registry using established criteria for record layout format, required event report types, required data items, and transmission standards.

2. **Receive Batch File:** To verify that a group of event reports meet the standards for record layout format, and that the batch has not been submitted previously.

3. **Validate Event Report:** To verify that information submitted on an event report represents a reportable case and meets logic, consistency, and data validity standards.

4. **Perform Patient Linkage:** To use defined criteria to determine whether source records refer to the same patient, based on the degree of agreement between demographic and other data fields. This process can be automated, manual, or a combination of both. Also called record linkage or matching.

5. **Perform Tumor Linkage:** To use defined criteria to determine whether source records for the same patient refer to the same tumor, based on the degree of agreement between cancer data fields. This process can be automated, manual, or a combination of both.

6. **Perform Consolidation:** To combine data from two or more linked source records for the same patient and tumor to produce a single "best" value for each variable. This process can be automated, manual, or a combination of both.

Enhance Data

A first-level function in which the consolidated cancer record is improved. It includes the following five steps:

1. **Perform Casefinding Audit:** An evaluation of a data source's ability to identify and transmit eligible, reportable neoplasms to the central cancer registry. It involves a review of the most likely sources of cases, including disease indices, pathology reports (such as surgical, bone marrow, autopsy, and cytology), radiation therapy logs, and surgical logs, to identify cancer cases that should have been reported to the central cancer registry, and compare these cases to those that were reported.

2. **Perform Quality Assurance/Quality Improvement:** Quality improvement is a planned set of activities by which a cancer registrar monitors quality and takes appropriate remedial action to improve future quality, maximizing correct reporting and characterizing the reporting process in measurable terms. Quality assurance or an audit is a formal review of patient records to evaluate case completeness and data quality.

3. **Perform External Linkage to Improve Data:** To obtain and/or validate data items by linking central cancer registry databases with non-central cancer registry databases. For example, using death certificate data to add missing vital status and race.

    - To overlay and append information in a database.
    - To supplement internal data to identify groups, to understand characteristics of groups better.
    - To merge dissimilar data sources (clinical data with an administrative database).
    - To enhance missing data using administrative data (data enhancement requires an independent database).

4. **Conduct Death Clearance:** Death clearance consists of two processes: death certificate follow-back is the process of reviewing a patient's medical history to determine if a cancer case reported first by a death certificate was diagnosed at any other source while the patient was alive; death certificate clearance is the process of linking death certificates from a state's vital statistics office with registry records to obtain death data for previously registered cancer cases.

5. **Conduct Follow-Up:** An organized system of long-term patient surveillance in which the registry monitors patients after discharge by obtaining updated information annually regarding a patient's health status.

Perform Interstate Data Exchange

A first-level function in which cancer cases occurring in patients who live in another state are reported to the appropriate central cancer registry.

Perform Calls for Data

A first-level function that includes—

1. **Respond to Calls for Data:** To submit cancer information to organizations to meet federal and state regulations and to assist in research activities (previously called reporting).

Use Data

A first-level function in which the final data are used. It includes the following four steps:

1. **Conduct Research and Analysis:** To analyze collected cancer data and convert it into information about treatment, survival, and other factors affecting cancer patients. To perform statistical analysis on collected data to provide interpreted information on cancer for a particular population.
2. **Provide Data for Use by Others:** To disseminate statistical analyses and data interpretations to researchers for scientific research, policymakers for planning services, hospitals for planning technology purchases and staffing, and non-governmental organizations for community cancer prevention and control.
3. **Conduct Linkage for Research:** To provide cancer registration data to researchers regarding their study cases.
4. **Perform Rapid Case Ascertainment:** A special casefinding procedure that allows early or preliminary reporting of certain types of cases to notify researchers of eligible study subjects.

Conduct Education and Training

A first-level function in which education and training of the registry staff are performed. This function is outside the scope of NPCR–MERP.

Handle Security

A first-level function relating to all security issues, such as data transmission and storage. This function is outside the scope of NPCR–MERP.